Strategic PLAN

for Addressing Health Disparities

NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES
NATIONAL INSTITUTES OF HEALTH

NATIONAL INSTITUTES OF HEALTH
UNITED STATES DEPARTMENT OF HEALTH AND HUMAN SERVICES

MARCH 2001
FOR ADMINISTRATIVE USE

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This plan focuses on research programs aimed at eliminating disparities in infectious and immunologic disease occurrence in minority and low-income populations. Within this plan, the National Institute of Allergy and Infectious Diseases (NIAID) has identified:

- **Goals** designed to strengthen our research programs with the aim of eliminating health disparities
- **Objectives** that will lead to outcomes designed to achieve those goals
- **Research initiatives and activities** designed to accomplish our objectives within the context of NIAID's mission and vision for health disparities research

Vision

By 2025, health disparities attributed to infectious and immunologic diseases will no longer exist.

Mission

NIAID conducts and supports research that strives to understand, treat, and ultimately prevent the myriad infectious, immunologic, and allergic diseases that threaten millions of human lives.

Goals

Goal 1: Conduct research to identify and address health disparities stemming from infectious and immunologic diseases in various populations

Goal 2: Foster the current and future pipeline of minority scientists and grantees

Goal 3: Improve education and outreach activities, and transfer of health information to minority communities

Introduction

A central feature of contemporary human societies is their increasing diversity. Differences in socioeconomic status, racial and ethnic background, education level, and occupation all intersect in complex ways to create disparities in health status. These disparities may stem from many factors, including accessibility of health care, increased risk of disease from occupational exposure, and increased risk of disease from underlying genetic, ethnic, or familial factors.

The National Institute of Allergy and Infectious Diseases (NIAID) has long recognized the importance of differential risks among populations for infectious and immunologic diseases. It is commonplace in the field of infectious diseases to identify subgroups within a population who are at higher risk for infection and disease because of identifiable factors. Advanced age, for example, increases susceptibility of older individuals to serious influenza virus infections.

NIAID also recognizes that racial and ethnic differences affect susceptibility to infection and disease. African American individuals with chronic hepatitis C virus infection do not respond as well to antiviral therapy as do members of other groups. Pneumococcal infections are much more serious in children who have sickle cell disease. African American women experience a higher rate of autoimmune diseases than do white women. Native American populations have higher rates of meningitis and invasive bacterial disease from *Haemophilus influenzae* type B (Hib) than do other groups. It is important to study differential disease susceptibilities because of the pragmatic benefit of research products, such as improved therapies, vaccines, or other interventions. This research also reveals critical information about the disease process, which in turn yields more opportunities for prevention or treatment.

This plan builds upon our 50 years of progress in understanding, treating, and preventing infectious and immunologic diseases. Many of NIAID's advances have helped to eliminate or mitigate health disparities. Development of effective glyco-conjugate vaccines to prevent Hib infections, for example, has almost eliminated Hib-related diseases in the Native American population. Development of effective therapies for hepatitis B infections, education interventions to improve asthma control in inner-city populations, and development of better therapies for HIV infection are all NIAID-supported research advances that have reduced health disparities.

But not all citizens reap the full benefits of our increased knowledge. Although health disparities affect numerous segments of the U.S. population, minority populations bear a disproportionate share of the burden. NIAID maintains its commitment to improve minority health and attract capable minority scientists to infectious and immunologic disease research. Recognizing that we can achieve our mission only through the interaction and participation of the minority scientific community throughout the United States, NIAID is committed to an extensive campaign that involves colleges and universities, medical centers, other professional organizations, and minority communities.

NIAID will continue to address health disparities with three major goals in mind. The first is to provide direct funding for research on diseases known to occur disparately in a population. This includes research on factors that place population subgroups at increased risk for infectious and immunologic diseases. It also includes identifying environmental, occupational, social, genetic, or biochemical factors that increase susceptibility to infectious and immunologic diseases.

The second goal is to increase the participation and support of minority scientists interested in research on health disparities, which includes increasing the number of minority scientists in training. This element is essential, because the contributions of minority scientists offer great hope for developing and applying new therapies, vaccines, and other approaches to solving the differential disease burden.

The third goal is to continue to communicate research developments to the population groups affected by health disparities. This element is one of the more complex to execute, for it must be continuous, flexible, and focused. NIAID will continue to work aggressively to develop health information tailored to the needs of affected communities.

GOAL 1: Conduct research to identify and address health disparities stemming from infectious and immunologic diseases in various populations

Continued research focused on addressing health disparities associated with infectious and immunologic diseases offers the best prospect for their solution. One of the most effective ways to address health disparities is to prevent the medical problem. Vaccines have been demonstrated to be the most effective and reliable method for the prevention of infectious diseases. NIAID has a long history of vaccine development, which includes such landmarks as the Hib conjugate vaccine, acellular pertussis vaccine, hepatitis B vaccine, and the new pneumococcal conjugate vaccine. All of these vaccines have extraordinary potential to reduce disparities in health.

The new era of immunology research similarly offers great promise in addressing the problems of asthma, autoimmune disease, and organ transplant rejection. NIAID has identified the following objectives to meet the goal of conducting research to identify and address health disparities related to infectious and immunologic diseases:

Objective 1: Expand research on HIV vaccine development and HIV prevention

Objective 2: Focus clinical immunology efforts on health disparities within the areas of organ transplantation and autoimmune diseases

Objective 3: Increase asthma and allergy research with an emphasis on inner-city populations

Objective 4: Improve minority access to organs, cells, and tissues for transplantation

Objective 5: Expand research in major infectious disease areas that disproportionately affect minorities, such as tuberculosis, hepatitis C, and sexually transmitted diseases

Objective 6: Ensure appropriate minority representation in NIAID-funded clinical trials

Objective 7: Raise awareness of NIAID-funded clinical trials and the opportunities they offer to community health care providers

HIV/AIDS

HIV/AIDS continues to affect minorities disproportionately. Of all U.S. cases reported in 1998, 45 percent were among blacks, 33 percent among whites, 20 percent among Hispanics, and less than 1 percent among Asian Americans/Pacific Islanders and American Indians/Alaska Natives. The rate of new AIDS cases reported in 1998 per 100,000 population was 81.9 among blacks, 34.7 among Hispanics, 8.4 among whites, 9.4 among American Indians/Alaska Natives, and 4.1 among Asian Americans/Pacific Islanders.

HIV incidence is also growing at a greater rate in women than in men, particularly among minority women. African American and Hispanic women constitute 77 percent of AIDS cases among women, compared to 48 percent among men. The proportion of new AIDS cases among women more than tripled from 1985 to 1998, from 7 percent to 23 percent.

NIAID directs a large national clinical trials program consisting of three groups: the Adult AIDS Clinical

Trials Group, the Terry Beirn Community Programs for Clinical Research on AIDS, and the Pediatric AIDS Clinical Trials Group. Each of those groups strives to ensure that a sufficient proportion of minority volunteers enroll in clinical trials so the results of the research may be generalized to the affected population at large.

NIAID's epidemiologic research program explores the clinical course and factors contributing to transmission of HIV infection in a variety of populations. Inner-city women and their children are the focus of the Women and Infants Transmission Study (WITS/WITSII). Similarly, the Women's Interagency HIV Study focuses on the clinical course of HIV infection in minority women.

The Multicenter AIDS Cohort Study (MACS) is a prospective, longitudinal study of HIV disease in men who have sex with men. This cohort has been followed for more than 15 years and is a valuable resource for information about the changing epidemic in the United States. A second recruitment effort for MACS specifically targeted minority populations. Both MACS and WITS study access to medical care among minorities.

One of the greatest challenges facing AIDS researchers today is the recruitment and retention of minority patients for clinical trials. Minorities face unique social, economic, and medical problems in coping with the challenges associated with HIV infection. As the epidemic expands in minority communities, inclusion of minorities in clinical trials is particularly urgent to ensure that research results apply to all populations affected by the disease. Recruiting underrepresented minority investigators to AIDS and AIDS-related clinical and basic research disciplines poses additional challenges.

NIAID has taken strong steps to ensure minority participation in clinical trials, natural history studies, and prevention studies to ensure that enrollment reflects the national epidemic. In reaching out to those populations, NIAID works with communities to identify and overcome barriers to participation in clinical trials. We develop culturally sensitive education materials and provide additional resources (e.g., childcare and transportation) to enhance participation of all communities in NIAID-sponsored trials.

Future Plans and Activities to Address Health Disparities

NIAID will initiate an HIV vaccine efficacy trial through the HIV Vaccine Trials Network. In collaboration with other scientists, NIAID will also study the scope and relationship of viral and human genetic variation in the context of vaccine development. This research is important because of the higher burden of HIV disease in African Americans and other minority groups.

Additional efficacy trials for topical microbicides and low-cost preventions for HIV maternal-infant transmission are also planned for FY 2001 through the HIV Prevention Trials Network. Another initiative in FY 2001 will continue long-term follow up of pediatric enrollees from the WITS study. This research will directly benefit minority women because microbicides are expected to reduce the risk of sexually transmitted HIV.

NIAID will continue to implement a national HIV vaccine trial communication effort to increase public understanding of HIV vaccine research and to facilitate recruitment and retention of volunteers in vaccine trials. This is critically important to ensure that the participants in NIAID clinical trials programs represent the affected racial/ethnic populations.

Tuberculosis

Minority populations have much higher rates of tuberculosis (TB) than do nonminorities. In 1998, 75 percent of active TB cases were reported in racial and ethnic minorities. The link between HIV and TB is thought to be a significant factor in the spread of TB. Tuberculosis is now the leading cause of death among people with HIV infection, responsible for more than 50 percent of AIDS deaths in HIV-endemic regions worldwide. The disproportionate impact of TB on minorities results largely from problems related to urban poverty; overcrowded living conditions; HIV infection; and inadequate treatment or compliance with TB therapy.

NIAID's Tuberculosis Research Unit (TBRU) encompasses an international, multidisciplinary team of collaborators who translate TB basic research findings to the clinical arena. TBRU-initiated studies develop or evaluate a variety of new assays, markers, prevention strategies, and therapeutics. A new drug that needs to be taken less often, now under study, will help solve compliance problems that currently exist within minority populations. In addition, NIAID also supports epidemiological studies to better understand the genetic and environmental factors that contribute to TB disease.

Future Plans and Activities to Address Health Disparities

Through TBRU, we will enroll approximately 1,000 volunteers in clinical trials to study the full spectrum of TB disease. Those studies will include a sizable number of minority patients and will determine the effectiveness and applicability of drugs, as well as examine microbiologic, radiographic, and immunologic markers in disparate populations.

NIAID's Division of Intramural Research (DIR) will support an Urban Clinical Trials Center to provide urban community health care providers in the Washington, D.C., area with citywide access to TB clinical trials.

To provide access to state-of-the-art knowledge and clinical expertise in TB treatment, NIAID will continue its innovative TB telemedicine program with physicians at South Texas Hospital. The majority of patients involved are economically disadvantaged Mexican Americans.

To study all aspects of the genetic and social epidemiology of TB in Harris County, Texas, a metropolitan area with more than 500 new cases per year, over 75 percent of which occur mostly among African Americans and Latinos.

Hepatitis C

Hepatitis C virus (HCV), a blood-borne pathogen that infects cells of the liver, is an important contributor to health disparities. The Centers for Disease Control and Prevention (CDC) recently reported that 3.9 million Americans show evidence of infection, with three-fourths being active carriers of the virus. Various population-based surveys indicate that HCV more heavily affects minority populations in the United States. African Americans are infected with hepatitis C virus at twice the rate of nonminority populations, and they are less responsive to therapy. This differential response to treatment remains unexplained and requires further investigation as part of our health disparities research plan.

Currently, NIAID supports four Hepatitis C Cooperative Research Centers devoted to understanding the infection and disease process. Two

of the centers focus on minority populations. The first follows a large inner-city, injection drug-using cohort that is predominantly African American. The second center is conducting research in an Alaska Native cohort. Centers examine the natural history of HCV in those populations as well as persistence and pathogenesis from both the virus and host perspectives. NIAID, in collaboration with several NIH institutes and centers (ICs), recently held a meeting on hepatitis C in African Americans. The meeting outlined future research to determine why many therapies do not elicit a positive response in African Americans.

Future Plans and Activities to Address Health Disparities

DIR scientists have contributed significantly to the development of licensed vaccines for hepatitis A and hepatitis B, and have been involved in the discovery, characterization, and epidemiology of the other four recognized hepatitis viruses. Current research includes determining the molecular virology of hepatitis A and developing a live-attenuated hepatitis A vaccine; delineating the genetic heterogeneity of hepatitis C virus and characterizing the immune response to it; diagnosing and preventing hepatitis E; and characterizing molecular and biological aspects of newly discovered hepatitis C-like viruses of humans and primates.

NIAID will launch a new Hepatitis C Virus Recovery and Research Network to gain important information about population factors contributing to the different infection and recovery rates observed in minority populations. This initiative builds upon our Hepatitis C Cooperative Research Centers program.

Sexually Transmitted Diseases

The current sexually transmitted disease (STD) epidemic in the United States disproportionately affects minorities. Recent studies indicate that the more prevalent nonulcerative STDs (such as chlamydia, gonorrhea, and trichomoniasis) as well as ulcerative diseases (such as genital herpes, syphilis, and chancroid) increase the risk of HIV transmission by at least three- to fivefold. Both the incidence of STDs and their long-term, in some cases life-threatening, consequences are higher among nonwhites than among whites.

Syphilis rates among African Americans remain more than 50 times greater than the rate for non-Hispanic whites, making syphilis an overwhelming cause of health disparities. However, current syphilis treatment strategies have not proved to be as effective in minority populations. Likewise, gonorrhea rates in African Americans are 40-fold higher than for non-Hispanic whites.

Although African American and Hispanic/Latino women comprise only 17 percent of the total female population of the United States, they make up a disproportionate share (33 percent) of clinic visits for pelvic inflammatory disease (PID). A disease of the upper reproductive tract, PID, is primarily caused by sexually transmitted bacterial infections. Moreover, African American and Hispanic women suffer more often from a late and often fatal manifestation of human papilloma virus infection: cervical cancer.

Among all populations, adolescents bear an enormous burden of STDs. In 1998, 64 percent of the 14 million new STD cases occurred in young people under age 24; more than 3 million cases occurred in teenagers. To address the increasing health disparities posed by STDs, NIAID is conducting four large clinical studies that focus on adolescent minority

populations. Two school-based studies measuring the impact of urine screening on the prevalence of chlamydial infection are also in progress.

NIAID conducts and supports many research projects to improve prevention methods and to find better ways to diagnose and treat STDs. NIAID also supports several large university-based STD research centers; those centers support a multi-disciplinary research approach by bringing together basic, clinical/epidemiological, and behavioral scientists. One STD Cooperative Research Center focuses exclusively on adolescents.

Owing to the spiraling number of acute and chronic illnesses caused by sexually transmitted microbes, and the disproportionate burden they place on minorities, women, and adolescents, STD research receives high priority in the NIAID health disparities research agenda.

Future Plans and Activities to Address Health Disparities

NIAID will intensify efforts to assess new, easy-to-administer treatments for syphilis that will increase compliance among affected populations. For example, we will support a clinical trial of a single-dose oral therapy for syphilis.

NIAID will stimulate syphilis vaccine development by analyzing the newly sequenced genome of *Treponema pallidum*, research that we supported. An effective syphilis vaccine could virtually eliminate health disparities associated with this STD.

NIAID will conduct a study to expand the understanding of factors that contribute to high-risk sexual behavior. Part of this study will measure the magnitude of risk reduction in the context of monthly support groups. Six hundred African-American and Mexican-American women with a current STD will be enrolled from health clinics in San Antonio, Texas.

We will launch a study to evaluate a behavioral approach to STD prevention and control in inner-city high schools.

We will conduct clinical studies of African-American adolescents that will identify behavioral and cultural risk factors for acquiring STDs.

We will examine the impact of restoring normal vaginal flora on frequency of STD relapse in 600 African-American teenage girls.

We will evaluate douching as a risk factor for PID in African-American women.

Autoimmune Diseases

Autoimmune diseases are disorders in which the immune system mistakenly attacks the body's own cells, tissues, and organs. Collectively, autoimmune diseases afflict more than 5 percent of the population in the United States. Some disproportionately affect women and minority populations. They include multiple sclerosis, Type 1 diabetes, systemic lupus erythematosus (SLE), rheumatoid arthritis, and inflammatory bowel disease. Their chronic nature leads to high medical costs and affects women's careers and families.

To address the health disparities caused by autoimmune diseases, the NIAID supports the Autoimmunity Centers of Excellence, which combine basic and clinical research in an environment of collaboration among multiple disease specialists, including neurologists, rheumatologists, endocrinologists, gastroenterologists, and clinical

immunologists. The Institute recently established the Immune Tolerance Network (ITN), a multi-institutional research program designed to conduct clinical trials of promising tolerogenic approaches; carry out integrated studies of underlying mechanisms; and develop biomarkers or surrogates of tolerance induction and maintenance. In addition, NIAID has established the Multiple Autoimmune Diseases Genetics Consortium, a repository of genetic and clinical data and materials collected from family members who have two or more distinct autoimmune diseases.

NIAID has also joined with other NIH ICs on several program announcements to stimulate research related to specific areas of autoimmune disease with health disparity implications. These include initiatives on Gender in the Pathogenesis of Autoimmunity and on Genetics, Mechanisms, and Signaling in Autoimmunity. NIAID is also currently funding an epidemiological study to investigate the prevalence of SLE in women in Africa and the Caribbean, and in African American women in the United States. The findings from this study will address genetic and environmental factors important in the pathogenesis of SLE.

Future Plans and Activities to Address Health Disparities

ITN will play an important role in future efforts by NIAID to address health disparities associated with autoimmune diseases by developing improved treatments.

In addition, the new International Histocompatibility Working Group focuses on the role of human leukocyte antigen (HLA) genes in cancer and autoimmune diseases, furthering understanding of HLA diversity in ethnically distinct populations and of the importance of non-HLA genes in graft rejection.

NIAID will also support clinical studies of stem-cell transplantation in several autoimmune diseases to determine those patients most likely to benefit from this therapy, the optimal conditioning regimens, and ultimately, the therapy's efficacy.

Asthma and Allergic Diseases

Allergic diseases, including asthma, are among the major causes of illness and disability in the United States. Asthma morbidity and mortality have been increasing in the United States for the past 15 years and are particularly high among poor, African-American inner-city residents. Asthma is more prevalent among minority children, and members of minority groups are three times as likely to die from it. Low socioeconomic status, exposure to cockroach allergens and pollutants, lack of access to medical care, and lack of self-management skills all contribute to increased morbidity from asthma.

To address health disparities caused by asthma in inner-city populations, NIAID established the National Cooperative Inner-City Asthma Study, which supports eight research groups in seven cities nationwide. This cooperative clinical research study identified multiple factors associated with asthma severity, especially among African American and Hispanic children. The study also implemented a comprehensive educational, behavioral, and environmental intervention program aimed at altering factors identified as major contributors to asthma severity. The study demonstrated that a combination of cockroach allergy and exposure to high levels of cockroach allergen is a major risk factor for asthma severity. It also demonstrated that the use of an asthma counselor in conjunction with indoor

environmental controls substantially reduced asthma morbidity.

Based on the program's success, NIAID and the National Institute of Environmental Health Sciences are jointly funding the Inner-City Asthma Study. Seven centers are participating in the evaluation of an intervention that emphasizes cost-effective measures for improving the indoor environment and physician education. In addition, through support from the U.S. Environmental Protection Agency, an arm of the study will focus on evaluating the effects of indoor and outdoor pollutants on asthma severity.

Also, two DIR physicians treat asthma and allergy patients, most of whom are African American, Asian, and Latino, at the E Street and Cordozo clinics in Washington, D.C. Their goal is to provide outreach to develop trust in minority communities.

Future Plans and Activities to Address Health Disparities

NIAID will collaborate with CDC to disseminate and implement the asthma intervention guidelines developed and tested by the Inner-City Asthma Study. This project will target approximately 5,000 inner-city children with physician-diagnosed moderate-to-severe asthma residing in the inner city, where at least 20 percent of the population lives on an income below Federal poverty guidelines. This is an outstanding opportunity for NIAID to work with CDC to translate a product of NIAID research into a program that will benefit disadvantaged children with asthma.

Expansion of ITN for asthma allergic diseases will enable assessment of promising tolerance induction strategies for asthma that will be important for those minority populations most severely affected.

NIAID will support a 1-year extension of the Inner-City Asthma Study data coordinating center to provide the resources for in-depth analyses of the efficacy of environmental controls and physician education on asthma severity in inner-city children.

Renewal of the Asthma and Allegic Diseases Research Centers will involve increased emphasis on clinical studies of the immunobiology of asthma, a focus that has great potential to benefit disproportionately affected minority populations.

Organ Transplantation

Kidney failure, diabetes, leukemia, coronary heart disease, and liver disease affect millions of Americans, many of them minorities. For many of these patients, transplantation of an organ, tissue, or cells would avert, and in some cases reverse, severe health problems.

Successful transplantation depends on the availability of donated organs and accurate methods to match donor and recipient HLA types. Subtle HLA differences can go undetected by current typing methods, yet the differences may be strong enough to trigger graft rejection. Also, knowledge of the relevant HLA types in minority populations is incomplete, and may contribute to the lower availability of organs and poorer graft survival for those populations. NIH supports numerous efforts to develop organ and bone marrow registries, increase organ donation, and improve HLA typing.

Future Plans and Activities to Address Health Disparities

NIAID will continue to support a new International Histocompatibility Working Group to identify important genetic differences in the cell-surface molecules responsible for graft acceptance and rejection. This new information will be used to prospectively match minority transplant recipients with organs, cells, and tissues that will survive longer.

Renewal of NIAID's Program Projects in Immunopathogenesis of Chronic Graft Rejection will include studies of observed differences between ethnic groups and analyze the onset and severity of chronic rejection. Differences in cytokine gene polymorphisms that are related to ethnicity will be examined. Gene chips will be used to look more generally at ethnic disparities.

ITN will evaluate the safety and efficacy of tolerance induction protocols in kidney and islet transplantation to achieve graft acceptance without the need for lifelong immunosuppressive therapy.

GOAL 2: Foster the current and future pipeline of minority scientists and grantees

NIAID supports a comprehensive portfolio of biomedical and behavioral research aimed at addressing health disparities. Integral to those activities are (1) training of minority investigators, (2) fostering infrastructure development, and (3) stimulating interest in the biomedical sciences among minority students at all educational levels. A well-equipped cadre of current and future minority researchers who bring a special blend of cultural knowledge, energy, and intellectual interest is required to address and resolve health disparities issues.

The pipeline of minority scientists in the United States is not well populated, which results in an underrepresentation of those scientists within the ranks of NIH-funded biomedical researchers. NIAID has long recognized the need for increasing participation of minorities in science and has supported programs that address several "segments" of the pipeline, from early K-12 programs to funding working minority investigators. NIAID has identified the following objectives as means to increase the number of current and future minority scientists:

Objective 1: Continue to support innovative programs designed to increase the number of minority investigators funded by NIAID

Objective 2: Provide training opportunities for minority scientists within NIAID-funded research programs

Objective 3: Foster the development of grantsmanship skills among minority scientists to increase their competitiveness within the research community

Objective 4: Develop curriculum and other educational materials for minority students in grades K-12 to stimulate interest in the biomedical sciences

Future Plans and Activities to Address Health Disparities

NIAID will continue the successful use of selective payment to fund minority scientists who fall outside the normal NIAID funding range.

NIAID will continue our highly successful mechanism of recruiting minority pre- and postdoctoral scientists into our intramural research laboratories. Over the past few years, we have recruited 13 new minority pre- and postdoctoral scientists to intramural laboratories.

NIAID will develop a new program announcement entitled Enhancement Awards for Underrepresented Minority Scientists. This program will support young basic and clinical minority scientists at the beginning of their research careers.

NIAID will continue its support of the Research Supplements for Underrepresented Minorities (RSUM) Program. This program will support minority investigators who wish to conduct NIAID-funded research projects.

NIAID will continue to provide opportunities through our Minority AIDS Clinical Training Program within the Adult AIDS Clinical Trials Network. This program will recruit and train minority health professionals by providing fellowships for four minority clinical researchers each year.

NIAID will continue funding a Short-Term Training Grant in STD research at the Howard University School of Medicine. This program works in partnership with the Sexually Transmitted Disease Cooperative Research Centers (STD-CRCs). The training grant will fund minority medical students' summer research activities at STD-CRC sites. In the future, NIAID will use this model to establish similar programs at other institutions that focus on serving minorities.

NIAID will increase its support for HIV/AIDS research projects at Research Centers at Minority Institutions, a program administered by the National Center for Research Resources. We will place an emphasis on clinical and molecular research, vaccine development, drug development, opportunistic infections, and immunology.

NIAID will continue to support our long-standing and highly successful Introduction to Biomedical Research Program. This program, in existence for 21 years, brings outstanding minority undergraduate students to the NIH campus for a weeklong program of mentoring, advice, and cutting-edge scientific talks.

NIAID will expand our Bridging the Career Gap program. This program brings RSUM awardees to NIH for a 2-day program of mentoring, career advice, and grantsmanship skill development.

In collaboration with the NIH Office of Science Education, NIAID produced a curriculum supplement for high school students entitled "Emerging and Re-emerging Diseases." This free supplement includes interactive exercises and enhances existing curricula at high schools throughout the United States. NIAID will expand its efforts with the Office of Science Education to reach elementary and middle school students, as well through curriculum supplements and other strategies.

GOAL 3: Improve education and outreach activities, and transfer of health information to minority communities

Reversing the impact of health disparities requires that the affected community understand and be aware of health-related information that will reduce or eliminate the risks for immunologic or infectious diseases. This is a complex problem that requires the development of consistent and credible messages on health risks, as well as information about ongoing

research activities and developments. Often these messages must be tailored to the communities at highest risk for the adverse consequences of the health disparity in question. While our efforts to date have been strong, we need to further strengthen and expand our efforts to produce health information that is culturally appropriate and ensure that it is disseminated to the appropriate communities. Developing methods to assess the effectiveness of these communications efforts is also critical.

NIAID outreach activities disseminate health-related information and research results to minority communities as well as to the health professionals who serve them. These activities include producing and disseminating print and audiovisual materials, exhibiting at professional and community meetings, sponsoring workshops and conferences for community health care providers and the public, and supporting demonstration and education research projects.

For example, the Institute published easy-to-read booklets in English and Spanish about tuberculosis. The booklets *Learn About Tuberculosis* and *Learn About Tuberculosis Infection* fill a critical need for patient information about an infectious disease that has a high incidence in many urban minority communities.

NIAID also published a booklet titled *Understanding Autoimmune Diseases*. SLE and other autoimmune diseases have a more detrimental effect on the health of African-American women than on any other group. The booklet describes diagnosis and treatment of the most common autoimmune diseases, such as type 1 diabetes and rheumatoid arthritis, as well as SLE. It also contains a comprehensive list of resources for patients, their families, and physicians.

NIAID continues to distribute its *How to Help Yourself/Ayudate* series of eight booklets on HIV/AIDS in English and Spanish to inner-city clinics, community health centers, and community-based organizations serving minority populations, as well as to correctional institutions. The booklets are also distributed by CDC's National Prevention Information Network. NIAID Spanish-language materials are also on the NIH Hispanic Communication Initiative Web site: *http://www.nih.gov/welcome/hispanic/index.html.*

The Institute helps support a new NIH Spanish-language newsletter, *El Pulso de la Salud: Información de los Institutos Nacionales de la Salud,* which is distributed nationwide. NIAID serves on the NIH committee that publishes the newsletter and contributed articles on HIV/AIDS and STDs to its first two issues.

In research education and demonstration, NIAID currently supports a project addressing the effects of educating patients with lupus, particularly African Americans, about the complications of their disease. In a statewide program, the Louisiana Organ Procurement Agency is conducting a NIAID-supported research project that combines education for target populations of potential donors and for the medical community to enhance donation. This multifaceted project involves: (1) identification of individuals willing to become donors through the establishment of a donor registry based on the statewide driver's license identification information system; (2) development of an intense hospital education program to increase awareness of the need for more donors; (3) initiation of intensified public and professional education efforts that target specific groups, including African Americans; and (4) development, testing, and evaluation of a behavioral strategy to increase family consent based on a theoretical model of various stages of readiness for decision-making.

NIAID also provides support to the University of Washington for a 5-year demonstration and education research project to evaluate the effectiveness of a unique community-based outreach network in increasing organ donation among minority populations in Seattle and Tacoma, Washington. The project involves: (1) development and distribution of educational materials in local neighborhoods and churches, using the services of VISTA (Volunteers in Service to America) participants recruited from African American and Asian communities; (2) production of an educational video for local communities and schools; (3) dissemination of public service announcements at Department of Motor Vehicles offices; and (4) development of a computerized database of community residents to record organ donation preferences, educational levels, and medical histories.

A second NIAID-supported project at the University of Washington is aimed at increasing organ donation among Alaska Natives. Culturally sensitive educational materials and community health education programs are being developed about transplant options, and about living and cadaveric organ donation for this population. These include an educational video featuring Alaska Native transplant recipients and donor families; an attitudinal survey; and regional training for native corporation local health educators, community health aides, local school teachers, and regional hospital staff. A key feature of this approach is to enable Alaska Natives to introduce to their communities the information necessary for informed decision-making.

NIAID has identified the following objectives as means to improve education and outreach activities and transfer health information to minority communities:

Objective 1: Conduct additional outreach activities within minority communities to increase awareness of current health issues and ongoing research activities and developments

Objective 2: Seek input from diverse groups to guide priority setting

Objective 3: Disseminate health-related materials and information to minority communities and the health professionals who serve them

Objective 4: Support projects to develop educational material and evaluate its effectiveness

Plans and Activities to Address Health Disparities

NIAID will augment our Minority Scientists Advisory Committee (MINSAC) to serve as a conduit of outreach to minority communities. MINSAC is a chartered committee that reports directly to the Director, NIAID, on minority staff matters. MINSAC's new duties will include outreach activities with minority communities, at both local and national levels.

NIAID will continue to seek input and participation from diverse groups on its National Advisory Council, Blue Ribbon Task Forces, and scientific workshops.

We will increase the participation of NIAID scientists in the presentation of information to audiences in minority communities. For example, scientists on NIAID staff have made presentations to high school students in the District of Columbia on HIV/AIDS, sexually transmitted diseases, and tuberculosis.

NIAID will expand the translation and dissemination of health information materials to high-risk populations. For example, we have already translated health information on HIV/AIDS into Spanish. Special editions of those materials have been made for audiences of low literacy. We will develop similar programs for other infectious and immunologic diseases.

We will assess the applicability of Internet-based methods of mass communication for health-related materials. The NIAID Web site is already heavily accessed as a reliable source of health information. We will examine the feasibility and practicality of expanding the use of audio accessibility via the Internet—selected broadcasts of health information and use of interactive formats (chat rooms) for information exchange, for example.

NIAID will increase the use of audiovisual media for the dissemination of health information of relevance to high-risk groups. We will disseminate this material via tape or on the Internet. This may be especially useful for guides to self-assessment of risk.

To familiarize individuals in high-risk groups with NIAID research programs, we will increase opportunities for minority scientists and students in both our intramural and extramural research programs. This interaction should lead to a better appreciation of the potential benefits to high-risk populations of our research efforts and help translate these findings into tangible benefits at the community level.

Rocky Mountain Laboratory's staff will expand outreach to public schools located in Native-American communities in Montana. Success of the programs will depend upon identifying interested, capable, and committed public school educators on the Native-American reservations.

Conclusion

NIAID must continue and strengthen its efforts to address health disparities as part of fulfilling our overall scientific mission. We must not only continue to focus on diseases that contribute to health disparities, but also increase outreach to minority populations and foster minority scientists in the pipeline. The sum of these efforts will help address our crucial health agenda in a manner that includes all segments of our population.

STRATEGIC PLAN FOR ADDRESSING HEALTH DISPARITIES
NIAID
FY 2000- FY 2003

(Dollars in Millions)

		FY 1999 Actual	FY 2000 Budget	FY 2001 PB	FY 2002 Est.	FY 2002 PJ	FY 2003 Est.	FY 2003 PJ
Goal A: Research								
1	Advance understanding of the development and progression of diseases that contribute to health disparities	$18.9	$21.7	$23.0	$24.3	$26.2	$25.8	$30.0
2	Develop new or improved approaches for detecting or diagnosing the onset or progression of disease and disability	0.6	1.2	1.3	1.3	2.6	1.4	5.2
3	Develop new or improved approaches for preventing or delaying the onset or progression of disease and ability	25.7	29.6	31.5	33.4	36.3	35.5	41.8
4	Develop new or improved approaches for treating disease and disability	70.5	81.0	86.3	92.0	99.4	97.9	114.3
Goal A Total		**$115.7**	**$133.5**	**$142.1**	**$151.0**	**$164.5**	**$160.6**	**$191.3**
Goal B: Research Infrastructure								
1	Support research training and career development	$8.3	$9.4	$9.9	$10.4	$11.3	$10.9	$12.8
2	Provide support for institutional resources	4.2	4.8	5.1	5.5	6.0	5.8	6.9
Goal B Total		**$12.5**	**$14.2**	**$15.0**	**$15.9**	**$17.3**	**$16.7**	**$19.7**
Goal C: Public Information/Outreach/Education								
1	Develop research-based information resources	$14.5	$16.4	$17.5	$18.6	$20.1	$19.8	$23.2
2	Communicate research-based information to increase public awareness	16.0	18.1	19.3	20.5	22.3	21.9	25.6
3	Transfer knowledge to health care providers	2.2	2.4	2.5	2.6	2.7	2.7	3.0
Goal C Total		**$32.7**	**$36.9**	**$39.3**	**$41.7**	**$45.1**	**$44.4**	**$51.8**
Health Disparities Total		**$160.9**	**$184.6**	**$196.4**	**$208.6**	**$226.9**	**$221.7**	**$262.8**

PB = President's Budget
PJ = Professional Judgment